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S-24-04

AF
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PATENT

Attorney Docket No.	Serial No.
56912US002	10/087,301

EXPRESS MAIL TRANSMITTAL LETTER

MS: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In re Application of:	William K. Leonard		
Serial No.:	10/087,301	Examiner:	Michelle A. Lazor
Confirmation No.:	2113	Art Unit:	1734
Filed:	February 27, 2002		
For:	STRAND COATING DEVICE AND METHOD		

We are transmitting the following documents:
Return Postcard
Express Mail Transmittal Letter [1 page]
Fee Transmittal for FY 2004 [1 page]
Brief On Appeal [43 pages] in triplicate

Please charge Deposit Account 13-3723 for any fees under 37 CFR §1.16 and §1.17 that may be required during the pendency of this application. This authorization includes the fee for any extension of time under 37 CFR §1.136(a) that may be necessary. To the extent any such extension should become necessary it is hereby requested.

Respectfully submitted,

Registration No.	Direct Dial	
29,524	612-331-7412	
Date: May 21, 2004		David R. Cleveland

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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 330

Complete if Known	
Application Number	10/087,301
Filing Date	February 27, 2002
First Named Inventor	William K. Leonard
Examiner Name	Michelle A. Lazor
Art Unit	1734
Attorney Docket No.	56912US002

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 13-3723

Deposit Account Name: 3M Innovative Properties Co.

The Director is authorized to: *(check all that apply)*

☑ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee(s) or any underpayment of fee(s)

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below	Fee Paid
Total Claims		-20** =		X =
Independent Claims		- 3** =		X =
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 330

SUBMITTED BY					
Name (Print/Type)	David R. Cleveland	*Registration No. (Attorney/Agent)*	29,524	*Telephone*	612-331-7412
Signature				*Date*	May 21, 2004

(Complete *(if applicable)*)

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRES

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Patent
Docket No.: 56912US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: William K. Leonard		
Serial No.:	10/087,301	Group Art Unit: 1734
Confirmation No.:	2113	Examiner: Michelle A. Lazor
Filed:	February 27, 2002	
For:	STRAND COATING DEVICE AND METHOD	

Certificate of Express Mailing	
Pursuant to 37 CFR 1.10, I certify that three copies of this Brief on Appeal are being deposited on the date indicated below with the United States Postal Service "Express Mail Post Office to Addressee" service addressed to: Mail Stop Appeal Brief – Patents, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.	
Express Mail Mailing Label No. ER 523730465 US	Signature of Person Mailing Application Lynelle K. Grube
Date of Deposit May 21, 2004	Printed Name of Person Mailing Application Lynelle K. Grube

BRIEF ON APPEAL

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is an appeal from the Final Rejection mailed December 23, 2003 rejecting claims 30 – 50*. The Notice of Appeal was filed by facsimile on March 22, 2004. The due date for this Brief is May 22, 2004.

This Brief is being filed in triplicate. The fee required under 37 CFR §1.17(c) for the appeal should be charged to Deposit Account No. 13-3723.

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* As explained below in the Section entitled "Status of Claims", only claims 30 – 48 are actually rejected.

TABLE OF CONTENTS

REAL PARTY IN INTEREST

The real party in interest is 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's legal representative and the assignee are not aware of any appeals or interference proceedings before the U.S. Patent and Trademark Office that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Fifty seven claims were filed with the application. Claims 1 – 29 were drawn to a method for coating a filamentous article and claims 30 – 57 were drawn to a coating device. The claims were subjected to a telephonic four-way restriction requirement on May 21, 2003. On August 18, 2003 (in Paper No. 5) the restriction requirement was confirmed and claims 30 – 50 were rejected. On November 18, 2003 Appellant confirmed the election of claims 30 – 50 with traverse and amended claims 1, 30 and 51. On December 23, 2003 the Examiner withdrew claims 1 – 29 and 51 – 57, finally rejected claims 30 – 48 and withdrew the rejection of claims 49 and 50. Appellant notes for the record that the Final Rejection did not affirmatively allow claims 49 and 50, that the accompanying Office Action Summary (From PTOL-326) did not list any allowable claims and that the Office Action Summary stated that "Claim(s) 30-50 is/are rejected". However, the Final Rejection imposed no new rejection of claims 49 and 50. Appellant assumes that claims 49 and 50 have been deemed allowable on the present record, and requests clarification or correction of this point in the Examiner's Answer.

On February 23, 2004 Appellant filed an Amendment After Final Rejection further amending claim 30, and requesting clarification concerning the status of claims 49 and 50. In an Advisory Action mailed March 10, 2004, the Examiner denied entry of the Amendment After Final Rejection, and did not comment on claims 49 and 50. This Appeal followed.

No claims are allowed, but as noted above claims 49 and 50 are no longer rejected. Appellant assumes for the time being that claims 30 – 48 are pending in this appeal. Claim 30 is an independent claim and claims 31 – 48 are dependent claims. A copy of the appealed claims is reproduced in the Appendix, with the sole amended claim (claim 30) being identified as "Amended" and the unamended claims (claims 31 – 48) being identified as "Original". A copy of dependent claims 49 and 50 is also reproduced in the Appendix in case they are needed by the Board.

STATUS OF AMENDMENTS

Appellant's Amendment filed November 18, 2002 was entered. As noted above, Appellant's February 23, 2004 Amendment After Final Rejection was not entered. Appellant will take this opportunity to state on the record that the February 23, 2004 Amendment After Final Rejection should be considered as withdrawn and should not be used to interpret or limit the claims of any patent that may issue on the present application or any subsequent application claiming priority thereto.

The claims in the Appendix incorporate all amendments made by Appellant.

SUMMARY OF THE INVENTION

Filamentous articles such as wires, cables and glass fibers often have an outer coating. Typically, a thick excess of coating liquid is applied to the entire exposed surface of the filamentous article, followed by removal of the excess coating material using a pad, roll or other device so that a desired final coating thickness can be obtained. These devices work well in non-precision applications. However, in general it is much more difficult to form very thin coatings on filamentous articles, especially when a highly uniform coating thickness is sought, when the coating is viscous or contains air bubbles, or when the coating operation is desired to be conducted at high speeds.

An exemplary embodiment of the device of rejected claims 30 – 48 is shown in **Fig. 3**:

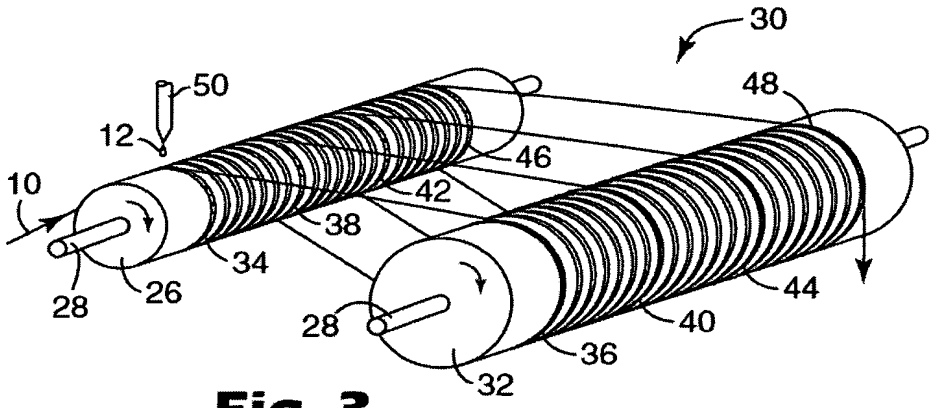


Fig. 3

Device **30** includes rolls **26** and **32**. Roll **32** may have a larger, equal or smaller diameter than roll **26**. Strand **10** passes through grooves **34**, **36**, **38**, **40**, **42**, **44**, **46** and **48** located alternately on rolls **26** and **32**, with the remaining grooves in rolls **26** and **32** being unused. The strand path is chosen to provide physical contact with at least two rotating coating-wetted roll surfaces during operation of device **30**. These roll surfaces may be referred to as an "improvement station". Their operation is explained in more detail below.

Coating liquid **12** is applied dropwise from dispenser **50** into groove **34** or onto strand **10** at a rate sufficient to produce a "substantially uneven" coating on strand **10**. Appellant defines the phrase "substantially uneven" as follows:

> *"The initially-applied coating is "substantially uneven". By this is meant that along a representative length (e.g., a 1 meter length) of the strand, the coating has voids or low spots whose minimum thickness is less than one-half the average coating thickness along that length."* (See paragraph 0023 at page 4 of the Written Description).

Dispenser **50** may for example apply coating liquid **12** as a series of interrupted patches or stripes into groove **34** or onto strand **10**. Although coating liquid **12** is shown in **Fig. 3** as being applied near the point at which strand **10** first reaches roll **26**, coating liquid **12** can be applied to the groove **34** or the strand **10** at any convenient upstream or downstream location.

Rolls **26** and **32** preferably are undriven and will rotate (in response to the movement of strand **10** and its friction with the grooves through which it passes) about axles **28**. The surfaces of rolls **26** and **32** contact and re-contact the wet coating at different positions along the length of strand **10**. Following startup of device **30** and a few revolutions of rolls **26** and **32**, the strand-contacting grooves **34, 36, 38, 40, 42, 44, 46** and **48** become wet with coating liquid **12** transferred to and fro between strand **10** and the grooves. The circumferential profile of liquid **12** in the strand-contacting grooves initially will be very non-uniform and will consist of many high and low degrees of fill. After a few revolutions of the rolls **26** and **32**, the circumferential profiles of liquid **12** in the strand-contacting grooves will trend towards equilibrium values. As explained in more detail in, e.g., paragraphs 0028 and 0052 of the Written Description, a new down strand coating profile can be created at the exit from the improvement station. Multiple images of a coating defect (e.g., a low spot or high spot) are propagated and repropagated by contact with the first roll, then modified by additional multiple defect images that are propagated and repropagated by a further contact or contacts with the second and any subsequent rolls of the improvement station. This can occur in a constructively and destructively additive manner so that the net result is a more uniform coating thickness or a controlled thickness variation. In effect, multiple waveforms are added together in a manner so that the constructive and destructive addition of each waveform combines to produce a desired degree of uniformity. Expressed somewhat differently, when a coating upset passes through the improvement station a portion of the coating from the high spots

is in effect picked off and placed back down in lower spots. Strand **10** thus becomes uniformly coated with a void-free coating.

The degree and rate of coating uniformity improvement is facilitated when the diameters of rolls **26** and **32** are different, and especially when the roll periods are not related to one another as described in more detail in, e.g., paragraphs 0039, 0040, 0050 and 0051 of the Written Description. The periods of rotation of the rolls preferably are chosen so that their actions do not reinforce coating defects on strand **10**.

Exceptionally thin, void-free and uniform coatings can be obtained using the claimed device. For instance, in Example 3 (see paragraph 0065 at page 17), a continuous, uniform coating having 0.0005 cc of coating liquid per meter of strand length was formed on monofilament fishing line. This coating has a calculated thickness of about 0.2 micrometers, determined by comparing the 0.027 cc/min coating deposition rate and 2 micrometer coating thickness in Example 1 to the 0.0025 cc/min coating deposition rate employed in Example 3. A void-free, uniform 0.2 micrometer coating is exceptionally thin and would be very difficult to form using conventional strand coating techniques.

The use of a drip applicator such as applicator **50** enables the applied coating liquid to be carefully premetered without waste or excess. Thus the final coating weight and thickness can be easily fine-tuned. The formation of uncontrolled rolling banks of coating liquid at the input or output side of the improvement rolls or dripping from a groove is thereby prevented or discouraged.

In a conventional strand coating process, application of an uneven coating would be regarded as undesirable and something to be avoided. However, for a given average coating weight it is in fact easier to apply a voided or otherwise substantially uneven coating than to apply a high-quality, uniform thickness coating. If such a substantially uneven coating is applied as disclosed and then passed through the disclosed improvement station, the coating uniformity is improved sufficiently so that the final coating can be very thin with very uniform thickness, and with a complete or substantial absence of voids.

The claimed devices thus facilitate the formation of continuous void-free, uniform and extremely thin coatings on filamentous articles using low-cost equipment.

ISSUES ON APPEAL

The issues on appeal are as follows:

1. Was it proper provisionally to reject claims 30, 33, 34 and 36 – 38 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 63 – 65, 67 and 68 of copending Application Serial No. 09/757,955?
2. Was it proper to reject claims 30, 32, 33, 35, 42 – 45 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,570,173 (Von Kohorn)?
3. Was it proper to reject claims 30 – 33, 36 – 45 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,867,108 (Severini)?
4. Was it proper to reject claims 30 – 34, 36, 38, 39, 42 – 46 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,034,250 (Guertin)?
5. Was it proper to reject claim 31 under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Von Kohorn?
6. Was it proper to reject claim 31 under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Guertin?
7. Was it proper to reject Claim 47 under 35 USC §103(a) as being unpatentable over Guertin as applied to claim 30 above, in view of U.S. Patent No. 4,059,068 (Guillermin et al.)?

GROUPING OF CLAIMS

The claims do not stand or fall together. For purposes of expediting this appeal and complying with 37 CFR §1.192(c)(7), and without conceding that any of the claims grouped below should be similarly grouped in any subsequent appeal or patent infringement litigation concerning these claims, the claims could be considered by the Board according to the following groups:

I. Claims 30, 32 and 34 - 45

II. Claim 31

III. Claim 33

IV. Claims 46 and 47

V. Claim 48

Claim 30 of Group I recites a basic form of the claimed device including a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the number or periods of the rolls improve the uniformity of the coating. Claim 32 recites a device having a coating station that sprays the coating liquid onto the filamentous article or onto a roll, and for purposes of this appeal can be considered with claim 30. Claims 34 – 45 recite particulars concerning the improvement station or its interaction with the filamentous article, and for purposes of this appeal can also be considered with claim 30.

Claim 31 of Group II recites a device having a coating station that drips the coating liquid onto the filamentous article or onto a roll. Claim 31 is separately patentable over claim 30 because, *inter alia*, a drip applicator is inexpensive to construct, simple to operate, and enables the applied coating to be carefully premetered without waste or excess. Thus the final coating weight and thickness can be easily fine-tuned (see e.g., paragraph 0030 at page 6 and paragraph 0064 at page 17).

Claim 33 of Group III recites a device having a coating station that periodically applies the coating liquid and whose application period can be adjusted to improve the uniformity of the coating. Claim 33 is separately patentable over claim 30 because, *inter alia*, for a given average coating weight it is in fact easier to apply a voided or otherwise substantially uneven coating than to apply a high-quality, uniform thickness coating (see e.g., paragraph 0006 at page 2). Controlling coating uniformity by adjusting the application period is desirable because the corresponding control mechanism is simple to construct and operate, and may provide wide-ranging and rapid response to control inputs. A stripe transfer belt coater provides an especially useful periodic coating station. It can be relatively easy to produce heavy coating stripes on a belt or other target substrate using such a device, but relatively difficult to apply thin, uniform and continuous initial coatings (see e.g., paragraphs 0046 through 0048 at pages 11 and 12 and **Fig. 10**).

Claim 46 of Group IV recites a device having an improvement station with at least one grooved roll. Claim 46 is separately patentable over claim 30 because, *inter alia*, grooves help guide the filamentous article, contain the applied liquid, and permit operation of the device at higher speeds (see e.g., paragraphs 0033 and 0038 at pages 8 – 9). Claim 47 recites a device wherein all of the rolls are grooved, and for purposes of this appeal can be considered with claim 46.

Claim 48 of Group V recites a device wherein a substantially uneven voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating. Claim 48 is separately patentable over claim 30 because, *inter alia*, the presence of voids along a length of a coated article might ordinarily be regarded as rendering that length of the article defective and not useable. In a conventional coating process, the application of an uneven coating would be avoided, and corrective steps might be taken so that the initially-applied coating would cover the entire exposed surface of the filamentous article as uniformly as possible. However, for a given average coating weight it is in fact easier to apply a voided coating than to apply a high-quality, uniform thickness coating. By applying such an ordinarily undesirable coating to a filamentous article and then passing the thus-coated article through the disclosed improvement station, continuous void-free, uniform and extremely thin coatings can be formed using low-cost equipment (see e.g., paragraphs 0006 and 0024 at pages 2 and 4).

ARGUMENTS OF APPELLANT

Was it proper provisionally to reject claims 30, 33, 34 and 36 – 38 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 63 – 65, 67 and 68 of copending Application Serial No. 09/757,955?

Claims 30, 33, 34 and 36 – 38 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 63 – 65, 67 and 68 of co-pending Application Serial No. 09/757,955. Because this is only a provisional rejection, Appellant is unsure whether appellate jurisdiction applies and whether the provisional rejection need be discussed in this Appeal. Fortunately the discussion will be relatively brief.

For the convenience of the Board `955 Application claims 63 – 65, 67 and 68 are reproduced below as originally filed:

63. An improvement station for improving the uniformity of a liquid coating on a substrate comprising:

a) three or more pick-and-place devices, or

b) two or more rotating periodic pick-and-place devices having the same direction of rotation

that can periodically contact and re-contact the coating at different positions on the substrate, wherein the periods of at least three of the devices are not periodically related.

64. An improvement station according to claim 63 wherein the periods are selected so that the uniformity of the coating is improved.

65. An improvement station according to claim 63 comprising a train of three or more rolls that contact the liquid coating, wherein the rotational periods of three or more of the rolls are not periodically related to one another.

67. An apparatus comprising a coating station for applying an uneven coating to a substrate and an improvement station comprising two or more pick-and-place devices that can periodically contact and re-contact the coating at different

positions on the substrate, wherein the periods of the devices are selected so that the uniformity of the coating is improved.

68. An apparatus according to claim 67 wherein the coating station initially applies a discontinuous coating.

These claims were withdrawn in the '955 application due to a restriction requirement. '955 application claims 1 – 62 were allowed on December 8, 2003 and the issue fee paid on March 4, 2004. A divisional application directed to '955 application claims 63 – 80 was filed on April 9, 2004. As of the date of this Brief on Appeal, the divisional claims corresponding to `955 Application claims 63 – 65, 67 and 68 have not been allowed.

Claims 30, 33, 34 and 36 – 38 of the present application recite *inter alia*, "a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article". This feature is not shown or suggested by `955 Application claims 63 – 65, 67 and 68 and thus Appellant maintains that the provisional obviousness-type double patenting rejection is not warranted. Appellant will however reconsider whether a suitable terminal disclaimer should be filed if the divisional claims corresponding to `955 Application claims 63 – 65, 67 and 68 are allowed prior to issuance of a patent on present claims 30, 33, 34 and 36 – 38.

Appellant accordingly requests that the provisional obviousness-type double patenting rejection be withdrawn or deferred.

Was it proper to reject claims 30, 32, 33, 35, 42 – 45 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,570,173 (Von Kohorn)?

Claims 30, 32, 33, 35, 42 – 45 and 48 include claims from the above-mentioned Groups I, III and V. Claims 30, 32, 33, 35, 42 – 45 and 48 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,570,173 (Von Kohorn). As to claims 30, 32 and 33, the Final Rejection asserted, *inter alia*, that:

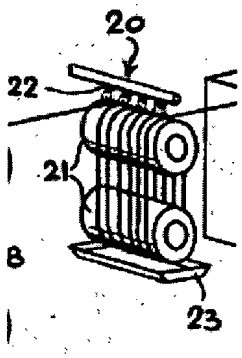
> *"Regarding Claims 30, 32, 33, Von Kohorn discloses a device comprising a coating station (20) that directly sprays a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls (21) that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article (Figure; column 4, lines 4 – 20); Von Kohorn also discloses the coating station which is capable of periodically applying the coating liquid, and of changing the application period by turning the spray nozzles on and off."* (See page 3 of the Final Rejection at numbered paragraph 4).

Appellant disagrees. Von Kohorn describes an apparatus for spinning and treating yarn. Von Kohorn's "continuous liquid aftertreating device **20**" (see e.g., col. 4, line 5 and the Drawing) is as its name indicates a *continuously* operating device. Device **20** does not "spray a substantially uneven coating" as asserted in the Final Rejection, and Von Kohorn does not disclose a "coating station that directly or indirectly applies a substantially uneven coating" as recited in rejected claims 30, 32 and 33. As mentioned above, Appellant defines the phrase "substantially uneven" as follows:

> *"The initially-applied coating is "substantially uneven". By this is meant that along a representative length (e.g., a 1 meter length) of the strand, the coating has voids or low spots whose minimum thickness is less than one-half the average coating thickness along that length."* (See paragraph 0023 at page 4 of the Written Description).

Von Kohorn's device **20** completely saturates a yarn with a treatment liquid. Von Kohorn passes the yarn six times under a set of four spray nozzles **22**, and applies sufficient treatment liquid to require use of a catch trough **23** to recover excess applied treatment

liquid (see e.g., col. 4, lines 4 – 20, the Drawing, and its illustration of device 20, reproduced below):



Von Kohorn says nothing regarding any voids or low spots in the initially applied treatment at device **20**. Moreover, notwithstanding the assertions in the Final Rejection, Von Kohorn does not say anything about "periodically applying the coating liquid" or "changing the application period by turning the spray nozzles on and off", and nothing in Von Kohorn shows that device **20** is "capable" of doing so. The Final Rejection elsewhere concedes that "Von Kohorn does not specifically speak to applying an uneven coating" (see page 8 of the Final Rejection at numbered paragraph 12). No proper basis has been provided to show that Von Kohorn enables the device of rejected claims 30, 32 and 33. For example, no valve, control or other structure capable of turning spray nozzles **22** on and off is shown in Von Kohorn, and no suggestion is made anywhere in Von Kohorn that one should do so during a yarn treating run. Note also that Von Kohorn discusses metering pumps **9** and their adjustment to control the titre of individual groups of filaments (see e.g., col. 3, line 75 through col. 4, line 3 and col. 4, lines 67 – 72) but says nothing regarding any regulation or adjustment of the flow of liquid through spray heads **22**, let alone anything about changing the flow sufficiently to apply a substantially uneven coating. To anticipate a claim, the reference must teach every element of the claim, see MPEP §2131. Von Kohorn does not do so.

As to claims 35, 42 – 45 and 48, the Final Rejection asserted:

"Regarding Claims 35, 42 - 45 and 48, Von Kohorn discloses the rolls have the same period of contact with the filamentous article, wherein the filamentous article has a direction of motion and the direction of rotation of all the rolls is the same as the direction of motion, wherein there is substantially no slippage between the rolls

and the filamentous article; and wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating (Figure; column 4, lines 4 - 23)." (See page 3 of the Final Rejection at numbered paragraph 4).

Appellant disagrees for at least the reason that Von Kohorn does not disclose applying a substantially uneven voided coating at device **20** and does not show conversion of such a coating "by contact with the rolls to a void-free coating". Moreover, Appellant can find no disclosure anywhere else in Von Kohorn of applying a substantially uneven voided coating or converting such a coating to a void-free coating.

In response to arguments like those above submitted earlier by Appellant, the Final Rejection asserted:

"In response to applicant's argument that Von Kohorn does not anticipate a substantially uneven coating to the yarn, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963). The apparatus disclosed by Von Kohorn is capable of spraying a substantially uneven coating to at least some of the exposed portion of a filamentous article. Although Von Kohorn does not specifically speak to applying an uneven coating, as stated in the previous Office Action the spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid. In addition, by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by Von Kohorn, one in the art would know the uneven or voided coating would be converted to a void-free coating." (See pages 8 – 9 of the Final Rejection at numbered paragraph 12).

And:

"In response to applicant's argument that the apparatus disclosed by Von Kohorn and Guertin does not drip an uneven coating to at least some of the exposed

portion of a filamentous article, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458,459 (CCPA 1963). Since the prior art structure disclosed by both Von Kohorn and Guertin is capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article, both Von Kohorn and Guertin render Claim 31 unpatentable."

(See pages 8 – 9 of the Final Rejection at numbered paragraph 14).

Appellant is not relying on a statement or recitation of "intended use", and rejected claims 30, 32, 33, 35, 42 – 45 and 48 are not drawn to a "process of making". Appellant has merely pointed out that Von Kohorn's device does not have a "coating station that directly or indirectly applies a substantially uneven coating" as recited in rejected claims 30, 32, 33, 35, 42 – 45 and 48. A person having ordinary skill in the art who reviewed Von Kohorn would not be enabled to make the device of rejected claims 30, 32, 33, 35, 42 – 45 and 48.

The Final Rejection incorrectly asserts that Von Kohorn's "spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid". A person having ordinary skill in the yarn treating art would leave Von Kohorn's spray nozzles turned on during a yarn treating run, not turn them on and off. If asked to consider the question, a person having ordinary skill in the yarn treating art would assume that turning the nozzles on and off during a run would produce defective untreated yarn.

Appellant expressly disagrees with the Final Rejection's assertion that "by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by Von Kohorn, one in the art would know the uneven or voided coating would be converted to a void-free coating". No proper basis has been provided for this assertion. It appears instead to have been made based on hindsight reasoning informed by Appellants' Written Description.

Appellant also disagrees with the Final Rejection's assertion that "the prior art structure disclosed by ... Von Kohorn ... is capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article". As mentioned above, no valve, control or other structure capable of turning spray nozzles **22** on and off is shown in Von Kohorn, and no suggestion is made anywhere in Von Kohorn that one should do so during a yarn treating run.

The Final Rejection also relies on *In re Casey* and *In re Otto*. These CCPA cases are much less timely and much less relevant than *In re Mills*, 16 USPQ2d 1490 (Fed. Cir. 1990) and *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). *In re Mills* involved an obviousness rejection of claims to an apparatus for producing aerated cementitious compositions. The claimed apparatus achieved aeration by driving its output pump at a capacity greater than the feed rate, thereby drawing air into the composition. The sole cited reference (Mathis) included a mixing chamber equipped with separate input and output motors. In response to a USPTO argument that "the Mathis machine is capable of being operated in such a fashion as to cause [the output] pump 18 to draw air into the mixing chamber 17 so that it is entrained in the mixture" (16 USPQ2d at 1432), the Federal Circuit reversed, citing *In re Gordon* and noting that "While Mathis' apparatus may be capable of being modified to run the way Mills' apparatus is claimed, there must be a suggestion or motivation in the reference to do so" (*id* at 1432). The present situation is similar. Nothing in Von Kohorn provides a suggestion or motivation to operate device **20** so that it would apply a substantially uneven coating rather than the saturating spray treatment Von Kohorn employs. Appellant also notes for the record that *In re Mills* and *In re Gordon* involved obviousness rejections, not an anticipation rejection. However, their reasoning is nonetheless applicable here, particularly since Von Kohorn does not include a valve or other controls that would be needed to carry out the asserted on and off spray nozzle operation.

Appellant accordingly requests reversal of the rejection of claims 30, 32, 33, 35, 42 – 45 and 48 under 35 USC §102(b) as being anticipated by Von Kohorn.

As noted above, the claim 33 device (see Group III) is separately patentable over claim 30 because, *inter alia*, for a given average coating weight it is in fact easier to apply a voided or otherwise substantially uneven coating than to apply a high-quality, uniform thickness coating (see e.g., paragraph 0006 at page 2). Controlling coating uniformity by

adjusting the application period is desirable because the corresponding control mechanism is simple to construct and operate, and may provide wide-ranging and rapid response to control inputs. Appellant separately requests reversal of the rejection of claim 33 under 35 USC §102(b) as being anticipated by Von Kohorn.

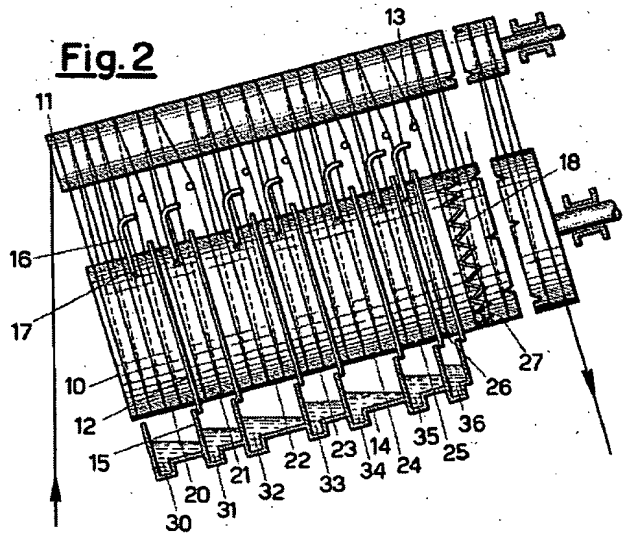
As noted above, the claim 48 device (see Group V) is separately patentable over claim 30 because, *inter alia*, the presence of voids along a length of a coated article might ordinarily be regarded as rendering that length of the article defective and not useable. In a conventional coating process, the application of an uneven coating would be avoided, and corrective steps might be taken so that the initially-applied coating would cover the entire exposed surface of the filamentous article as uniformly as possible. However, for a given average coating weight it is in fact easier to apply a voided coating than to apply a high-quality, uniform thickness coating. By applying such an ordinarily undesirable coating to a filamentous article and then passing the thus-coated article through the disclosed improvement station, continuous void-free, uniform and extremely thin coatings can be formed using low-cost equipment (see e.g., paragraphs 0006 and 0024 at pages 2 and 4). Appellant separately requests reversal of the rejection of claim 48 under 35 USC §102(b) as being anticipated by Von Kohorn.

Was it proper to reject claims 30 – 33, 36 – 45 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,867,108 (Severini)?

Claims 30 – 33, 36 – 45 and 48 include claims from the above-mentioned Groups I, II, III and V. Claims 30 – 33, 36 – 45 and 48 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 2,867,108 (Severini). As to claims 30 – 33, the Final Rejection asserted, *inter alia*, that:

> *"Regarding Claims 30 - 33, Severini discloses a device comprising a coating station (16) that indirectly sprays by means of a shower nozzle or drips by means of a pipe (column 4, lines 43 - 48) a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls (10) (11) that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article (Figures 1 and 2; column 4, lines 43 - 62 and column 5, lines 16 - 37); Severini also discloses the coating station which is capable of periodically applying the coating liquid, and of changing the application period by turning the spray nozzles on and off. Thus Severini discloses all the limitations of Claims 30 - 33, and anticipate the claimed invention."* (See page 4 of the Final Rejection at numbered paragraph 5).

Appellant disagrees. Severini describes a yarn treatment apparatus, shown in his Fig. 2, reproduced below:



As is usual in yarn treatment, the apparatus saturates the yarn. For example, Severini says he employs "relatively abundant quantities of treatment liquors" that are "abundantly fed" to roller **10** by device **16** (see e.g., col. 4, lines 44 – 49 and col. 5, lines 43 – 63). The applied liquid forms a "relatively abundant" liquid film (see e.g., col. 5, lines 57 – 60) which wets the uphill faces of each flange **12** and falls into the cells in trough **14** (see e.g., col. 5, lines 44 – 52). Notwithstanding the assertions in the Final Rejection, Severini nowhere says that the treatment liquid "drips by means of a pipe" onto roller **10**. Severini merely says that the devices **16** may be "a simple pipe with a suitably positioned orifice" (see e.g., col. 4, line 47). Severini does say that flanges or separate "drip pans" may be employed to collect drips *from* roller **10** (see e.g., col. 8, line 9 and col. 10, lines 12, 31 and 39), but this is not a disclosure of "a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in rejected claims 30 – 33. It is a disclosure of a device that saturates the yarn by initially drenching it in the treatment liquor.

Moreover, notwithstanding the assertions in the Final Rejection, Severini does not disclose a "coating station which is capable of periodically applying the coating liquid, and of changing the application period by turning the spray nozzles on and off." This assertion is incorrect for the same reasons as the Final Rejection's similar assertions concerning Von Kohorn are incorrect. No proper basis has been provided to show that Severini enables the device of rejected claims 30 – 33. For example, no valve, control or other structure capable of turning the devices **16** on and off is shown in Severini, and no suggestion is made anywhere in Severini that one should do so during a yarn treating run. To anticipate a claim, the reference must teach every element of the claim, see MPEP §2131. Severini does not do so.

As to claims 36 – 45 and 48, the Final Rejection asserted:

"Regarding Claims 36 - 45 and 48, Severini discloses the rolls that do not have the same period of contact with the filamentous article, wherein the rolls all have different periods of contact with the filamentous article and wherein the rotational periods of the rolls are not periodically related; wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating (Figures 1 and 2), wherein the filamentous article has a direction of motion and the direction of rotation of all the rolls is the same as the direction

> *of motion, wherein there is substantially no slippage between the rolls and the filamentous article; and wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating (Figures 1 and 2; column 3, line 66 - column 4, line 11). Thus Severini discloses all the limitations of Claims 36 - 45 and 48, and anticipates the claimed invention."* (See page 4 of the Final Rejection at numbered paragraph 5).

Appellant disagrees for at least the reason that Severini does not disclose applying a substantially uneven voided coating using the devices **16** and does not show conversion of such a coating "by contact with the rolls to a void-free coating". Moreover, Appellant can find no disclosure anywhere else in Severini of applying a substantially uneven voided coating or converting such a coating to a void-free coating.

In response to arguments like those above submitted earlier by Appellant, the Final Rejection asserted:

> *"Again, in response to applicant's argument that Severini and Guertin do not anticipate a substantially uneven coating to the yarn, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458,459 (CCPA 1963). Although both Severini and Guertin does not specifically speak to applying an uneven coating, as stated in the previous Office Action the spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid. In addition, by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by both Severini and Guertin, one in the art would know the uneven or voided coating would be converted to a void-free coating."* (See page 8 of the Final Rejection at numbered paragraph 13).

Appellant is not relying on a recitation of "intended use", and rejected claims 30 – 33, 36 – 45 and 48 are not drawn to a "process of making". Appellant has merely pointed out that Severini's device does not have a "coating station that directly or indirectly applies a

substantially uneven coating" as recited in rejected claims 30 – 33, 36 – 45 and 48. A person having ordinary skill in the art who reviewed Severini would not be enabled to make the device of rejected claims 30 – 33, 36 – 45 and 48.

The Final Rejection incorrectly asserts that Severini's "spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid". A person having ordinary skill in the yarn treating art would leave Severini's spray nozzles turned on during a yarn treating run, not turn them on and off. If asked to consider the question, a person having ordinary skill in the yarn treating art would assume that turning the nozzles on and off during a run would produce defective untreated yarn.

Appellant expressly disagrees with the Final Rejection's assertion that "by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by both Severini and Guertin, one in the art would know the uneven or voided coating would be converted to a void-free coating". No proper basis has been provided for this assertion. Appellant also notes that Severini does not include a valve or other controls that would be needed to carry out the asserted on and off spray nozzle operation.

Appellant has already discussed *In re Casey* and *In re Otto*, and relies on the arguments given above and on the more recent and more relevant decisions in *In re Mills* and *In re Gordon*.

Appellant accordingly requests reversal of the rejection of claims 30 – 33, 36 – 45 and 48 under 35 USC §102(b) as being anticipated by Severini.

As noted above, the claim 31 device (see Group II) is separately patentable over claim 30 because, *inter alia*, a drip applicator is inexpensive to construct, simple to operate, and enables the applied coating to be carefully premetered without waste or excess. Thus the final coating weight and thickness can be easily fine-tuned (see e.g., paragraph 0030 at page 6 and paragraph 0064 at page 17). Appellant separately requests reversal of the rejection of claim 31 under 35 USC §102(b) as being anticipated by Severini.

As explained above in connection with the 35 U.S.C. §102(b) rejection based on Von Kohorn, the claim 33 device (see Group III) is separately patentable over claim 30.

Appellant separately requests reversal of the rejection of claim 33 under 35 USC §102(b) as being anticipated by Severini.

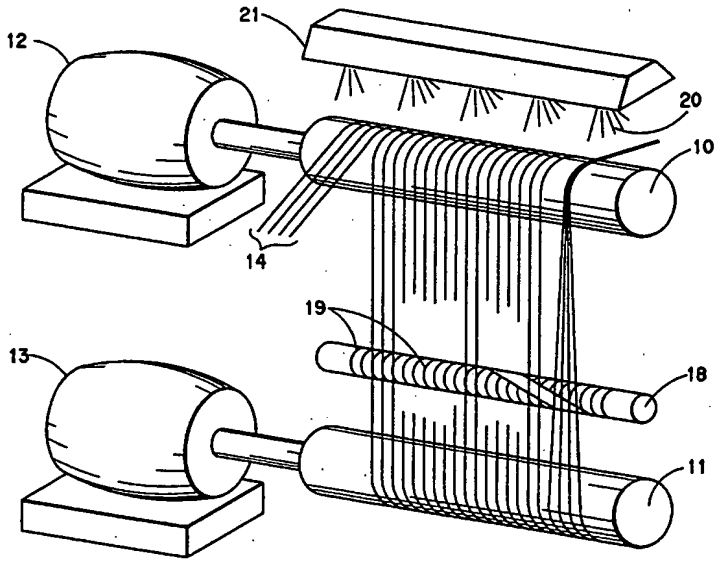
As explained above in connection with the 35 U.S.C. §102(b) rejection based on Von Kohorn, the claim 48 device (see Group V) is separately patentable over claim 30. Appellant separately requests reversal of the rejection of claim 48 under 35 USC §102(b) as being anticipated by Severini.

Was it proper to reject claims 30 – 34, 36, 38, 39, 42 – 46 and 48 under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,034,250 (Guertin)?

Claims 30 – 34, 36, 38, 39, 42 – 46 and 48 include claims from the above-mentioned Groups I, II, III, IV and V. Claims 30 – 34, 36, 38, 39, 42 – 46 and 48 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,034,250 (Guertin). As to claims 30 – 33, the Final Rejection asserted:

> *"Regarding Claims 30 - 33, Guertin discloses a device comprising a coating station (21) that directly sprays or drips a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls (10) (11) (18) that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article (Figure; column 2, lines 56 - 66); Guertin also discloses the coating station which is capable of periodically applying the coating liquid, and of changing the application period by turning the spray nozzles on and off. Thus Guertin discloses all the limitations of Claims 30 – 33, and anticipate the claimed invention."* (See page 5 of the Final Rejection at numbered paragraph 6).

Like Von Kohorn and Severini, Guertin describes a yarn treatment apparatus, shown in the sole figure of Guertin's Drawing, reproduced below:



Also like Von Kohorn and Severini, Guertin saturates the yarn. Guertin sprays treatment liquid **20** onto yarn **14** by passing yarn **14** several times (for example, six times in Example 1) under a set of five spray nozzles mounted in manifold **21**. Notwithstanding the assertions in the Final Rejection, Guertin nowhere says that he "drips" the treatment liquid onto the yarn. Also, Guertin nowhere says that he applies a "substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in rejected claims 30 – 33. Moreover, notwithstanding the assertions in the Final Rejection, Guertin does not disclose a "coating station which is capable of periodically applying the coating liquid, and of changing the application period by turning the spray nozzles on and off." This assertion is incorrect for the same reasons as the Final Rejection's similar assertions concerning Von Kohorn and Severini are incorrect. No proper basis has been provided to show that Guertin enables the device of rejected claims 30 – 33. For example, no valve, control or other structure capable of turning the spray nozzles in manifold **21** on and off is shown in Guertin, and no suggestion is made anywhere in Guertin that one should do so during a yarn treating run. To anticipate a claim, the reference must teach every element of the claim, see MPEP §2131. Guertin does not do so.

As to claims 34, 36, 38 and 39, the Final Rejection asserted:

"Regarding Claims 34, 36, 38, and 39, Guertin discloses at least three rolls, wherein the rolls do not have the same period of contact with filamentous article; wherein the rotational periods of the rolls are not periodically related; and wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating (Figure). Thus Guertin discloses all the limitations of Claims 34, 36, 38, and 39, and anticipate the claimed invention." (See page 5 of the Final Rejection at numbered paragraph 6).

Appellant disagrees, for at least the reason that Guertin does not disclose application of a substantially uneven coating as recited in parent claim 30.

As to claims 42 – 46 and 48, the Final Rejection also asserted:

"Regarding Claims 42 -46 and 48, Guertin discloses the filamentous article has a direction of motion and the direction of rotation of all the rolls is the same as the direction of motion, wherein there is substantially no slippage between the rolls and the filamentous article; wherein at least one of the rolls is grooved; and wherein a voided coating is applied to the filamentous article and converted by

contact with the rolls to a void-free coating (Figure; column 2, line 56 column 3, line 15). Thus Guertin discloses all the limitations of Claims 42 – 46 and 48, and anticipates the claimed invention." (See pages 5 – 6 of the Final Rejection at numbered paragraph 6).

Appellant disagrees for at least the reason that Guertin does not disclose applying a substantially uneven voided coating using the spray nozzles mounted in manifold **21** and does not show conversion of such a coating "by contact with the rolls to a void-free coating". Moreover, Appellant can find no disclosure anywhere else in Guertin of applying a substantially uneven voided coating or converting such a coating to a void-free coating.

In response to arguments like those above submitted earlier by Appellant, the Final Rejection asserted:

"Again, in response to applicant's argument that Severini and Guertin do not anticipate a substantially uneven coating to the yarn, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458,459 (CCPA 1963). Although both Severini and Guertin does not specifically speak to applying an uneven coating, as stated in the previous Office Action the spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid. In addition, by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by both Severini and Guertin, one in the art would know the uneven or voided coating would be converted to a void-free coating." (See page 8 of the Final Rejection at numbered paragraph 13).

Appellant is not relying on a recitation of "intended use", and rejected claims 30 – 34, 36, 38, 39, 42 – 46 and 48 are not drawn to a "process of making". Appellant has merely pointed out that Guertin's device does not have a "coating station that directly or indirectly applies a substantially uneven coating" as recited in rejected claims 30 – 34, 36, 38, 39, 42

– 46 and 48. A person having ordinary skill in the art who reviewed Guertin would not be enabled to make the device of rejected claims 30 – 34, 36, 38, 39, 42 – 46 and 48.

The Final Rejection incorrectly asserts that Guertin's "spray nozzles may be turned on and off, thereby providing an uneven coating, as well as periodically applying the coating liquid". A person having ordinary skill in the yarn treating art would leave Guertin's spray nozzles turned on during a yarn treating run, not turn them on and off. If asked to consider the question, a person having ordinary skill in the yarn treating art would assume that turning the nozzles on and off during a run would produce defective untreated yarn.

Appellant expressly disagrees with the Final Rejection's assertion that "by applying an uneven coating to yarn using spray nozzles that are turned on and off, and then contacting said yarn with rolls as disclosed by both Severini and Guertin, one in the art would know the uneven or voided coating would be converted to a void-free coating". No proper basis has been provided for this assertion. Appellant also notes that Guertin does not include a valve or other controls that would be needed to carry out the asserted on and off spray nozzle operation.

Appellant has already discussed *In re Casey* and *In re Otto*, and relies on the arguments given above and on the more recent and more relevant decisions in *In re Mills* and *In re Gordon*.

The Final Rejection also asserted:

> *"In response to applicant's argument that the apparatus disclosed by Von Kohorn and Guertin does not drip an uneven coating to at least some of the exposed portion of a filamentous article, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458,459 (CCPA 1963). Since the prior art structure disclosed by both Von Kohorn and Guertin is capable of dripping an uneven coating to at least some of the exposed portion of a*

filamentous article, both Von Kohorn and Guertin render Claim 31 unpatentable."

(See pages 8 – 9 of the Final Rejection at numbered paragraph 14).

Appellant is not relying on a statement or recitation of "intended use", and rejected claims 30 – 34, 36, 38, 39, 42 – 46 and 48 are not drawn to a "process of making". Appellant has merely pointed out that Guertin's device does not have a "coating station that directly or indirectly applies a substantially uneven coating" as recited in rejected claims 30 – 34, 36, 38, 39, 42 – 46 and 48. A person having ordinary skill in the art who reviewed Guertin would not be enabled to make the device of rejected claims 30 – 34, 36, 38, 39, 42 – 46 and 48.

Appellant also disagrees with the Final Rejection's assertion that "the prior art structure disclosed by ... Guertin ... is capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article". As mentioned above, no valve, control or other structure capable of turning the spray nozzles in manifold **21** on and off is shown in Guertin, and no suggestion is made anywhere in Guertin that one should do so during a yarn treating run.

Appellant accordingly requests reversal of the rejection of claims 30 – 34, 36, 38, 39, 42 – 46 and 48 under 35 USC §102(b) as being anticipated by Guertin.

As explained above in connection with the 35 U.S.C. §102(b) rejection based on Severini, the claim 31 device (see Group II) is separately patentable over claim 30. Appellant separately requests reversal of the rejection of claim 31 under 35 USC §102(b) as being anticipated by Guertin.

As explained above in connection with the 35 U.S.C. §102(b) rejections based on Von Kohorn and on Severini, the claim 33 device (see Group III) is separately patentable over claim 30. Appellant separately requests reversal of the rejection of claim 33 under 35 USC §102(b) as being anticipated by Guertin.

As noted above, the claim 46 device (see Group IV) is separately patentable over claim 30 because, *inter alia*, grooves help guide the filamentous article, contain the applied liquid, and permit operation of the device at higher speeds (see e.g., paragraphs 0033 and 0038 at pages 8 – 9). Appellant separately requests reversal of the rejection of claim 46 under 35 USC §102(b) as being anticipated by Guertin.

As explained above in connection with the 35 U.S.C. §102(b) rejections based on Von Kohorn and on Severini, the claim 48 device (see Group V) is separately patentable

over claim 30. Appellant separately requests reversal of the rejection of claim 48 under 35 USC §102(b) as being anticipated by Guertin.

Was it proper to reject claim 31 under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Von Kohorn?

Claim 31 was rejected under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Von Kohorn. The Final Rejection asserted:

> *"Von (Kohorn) discloses using a coating station (20). The sprayers of the coating station are considered capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article. In any event, it would have been obvious to use dripping means to conserve coating material and prevent excess coating material from being wasted in the coating area by spraying."* (See page 6 of the Final Rejection at numbered paragraph 8).

Claim 31 (which recites a device "wherein the coating station drips the coating liquid onto the filamentous article or onto a roll") clearly is not anticipated or made obvious by Von Kohorn. As noted above, Von Kohorn's "continuous liquid aftertreating device **20**" is as its name indicates a *continuously* operating device. Device **20** does not directly or indirectly apply "a substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in parent claim 30, and is not a coating station that "drips the coating liquid onto the filamentous article or onto a roll" as recited in rejected claim 31.

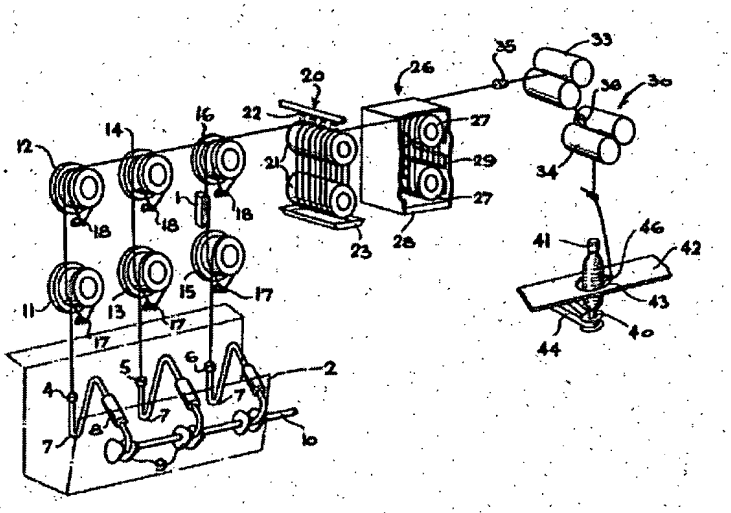
No proper basis has been provided to support the Final Rejection's assertion that Von Kohorn's sprayers "are considered capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article ". As noted above the Final Rejection elsewhere concedes that "Von Kohorn does not specifically speak to applying an uneven coating" (see page 8 of the Final Rejection at numbered paragraph 12). No valve, control or other structure capable of turning spray nozzles **22** on and off is shown in Von Kohorn, and no suggestion is made anywhere in Von Kohorn that one should do so during a yarn treating run.

As noted above, the alleged capability of Von Kohorn's device is not the issue. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so", see *In re Gordon* and MPEP §2143.01.

The Final Rejection proposes to modify Von Kohorn by converting its saturating spray nozzles **22** to drip applicators. As can be seen from three of the cited yarn treatment references (*viz.*, Von Kohorn, Severini and Guertin), saturation using several continuously-operating spray nozzles is the norm for yarn treatment, not drip application. This continuous saturation approach avoids the risk of incomplete yarn treatment. For example, Von Kohorn uses a ganged set of spray nozzles **22** distributed over the length of a roller **21** wrapped with several turns of yarn. A proposed modification cannot change the principle of operation of a reference, see MPEP §2143.01. The Final Rejection's proposed substitution of drip application for Von Kohorn's spray nozzles improperly changes Von Kohorn's principle of operation, by doing away with saturation.

Note also that the Final Rejection apparently proposes to substitute a drip applicator for each of Von Kohorn's spray nozzles **22**. As can be appreciated from Appellant's Written Description, a coating station having several drip applicators in series would reapply additional liquid at each applicator, thus nullifying or largely nullifying the pick-and-place action and coating uniformity improvement that might be obtained from roll contacts taking place before the yarn passes the last drip applicator. Expressed somewhat differently, Von Kohorn's device would be less likely to produce a uniform wet coating on a filamentous article if a gang of drip applicators was employed than if only one or two drip applicators was employed near the first yarn wrap.

Appellant's claimed device can employ a plurality of drip applicators in series, and Appellant does not wish to disclaim such a structure. But Appellant notes that the Final Rejection's proposed modification of Von Kohorn's device would not provide any roll contacts after the last drip applicator and before dryer **26**:



Also, the Final Rejection has not provided a proper suggestion or motivation in Von Kohorn or elsewhere to "use dripping means to conserve coating material", or to "prevent excess coating material from being wasted in the coating area by spraying". Von Kohorn has no need to do so. Von Kohorn uses catch trough **23** to collect and if need be recirculate excess treating liquid and thus has already addressed the conservation issue relied on in the Final Rejection.

Appellant accordingly requests reversal of the rejection of Claim 31 under 35 USC §102(b) as anticipated by or under 35 USC §103(a) as obvious over Von Kohorn.

Was it proper to reject claim 31 under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Guertin?

Claim 31 was also rejected under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Guertin. The Final Rejection asserted:

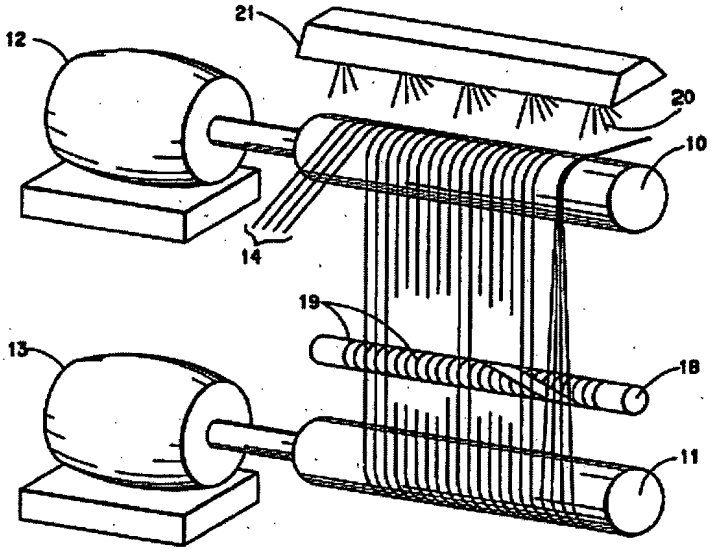
> *"Guertin discloses using a coating station (21). The sprayers of the coating station are considered capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article. In any event, it would have been obvious to use dripping means to conserve coating material and prevent excess coating material from being wasted in the coating area by spraying."* (See page 6 of the Final Rejection at numbered paragraph 9).

Appellant disagrees for the reasons already indicated above with respect to the 35 U.S.C. §102/103 rejection based on Von Kohorn. Guertin's spray heads in manifold **21** do not directly or indirectly apply "a substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in parent claim 30, and do not provide a coating station that "drips the coating liquid onto the filamentous article or onto a roll" as recited in rejected claim 31.

No proper basis has been provided to support the Final Rejection's assertion that Guertin's sprayers "are considered capable of dripping an uneven coating to at least some of the exposed portion of a filamentous article ". No valve, control or other structure capable of turning the spray nozzles in manifold **21** on and off is shown in Guertin, and no suggestion is made anywhere in Guertin that one should do so during a yarn treating run. Also, the alleged capability of Guertin's device is not the issue, see *In re Mills*, *In re Gordon* and MPEP §2143.01.

The Final Rejection proposes to modify Guertin by converting the saturating spray nozzles in its manifold **21** to drip applicators. As noted above, saturation using several continuously-operating spray nozzles is the norm for yarn treatment, not drip application. The Final Rejection's proposed substitution of drip application for Guertin's spray nozzles improperly changes Guertin's principle of operation, by doing away with saturation. Note also that the Final Rejection apparently proposes to substitute a drip applicator for each of Guertin's spray nozzles. As with the Final Rejection's proposed modification of

Von Kohorn's device, the proposed modification of Guertin's device would not provide any roll contacts after the last drip applicator:



Also, the Final Rejection has not provided a proper suggestion or motivation in Guertin or elsewhere to "use dripping means to conserve coating material", or to "prevent excess coating material from being wasted in the coating area by spraying". Guertin has no need to do so. Guertin does not expressly show a catch trough like that shown in Von Kohorn (catch trough **23**) and Severini (drain trough **14**). However, Guertin says that "The rolls and manifold are customarily enclosed in an appropriate housing (not shown)" (see col. 3, lines 10 – 12). The housing would collect and if need be could recirculate excess treating liquid and thus already addresses the conservation issue relied on in the Final Rejection.

Appellant accordingly requests reversal of the rejection of Claim 31 under 35 USC §102(b) as anticipated by or under 35 USC §103(a) as obvious over Guertin.

Was it proper to reject Claim 47 under 35 USC §103(a) as being unpatentable over Guertin as applied to claim 30 above, in view of U.S. Patent No. 4,059,068 (Guillermin et al.)?

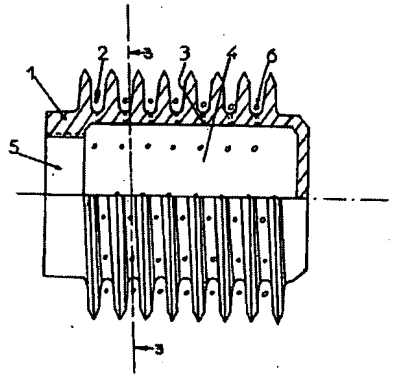
Claim 47 was rejected under 35 USC §103(a) as being unpatentable over Guertin as applied to claim 30 above, in view of U.S. Patent No. 4,059,068 (Guillermin et al.). The Final Rejection asserted:

> *"Guertin discloses all the limitations of Claim 30, but does not specifically disclose all of the rolls to have grooves. However, Guillermin et al. teaches using grooved rolls for treatment of filamentary products (column 1, lines 37 - 43). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use grooves for all the rolls of the treatment apparatus to reduce friction (column 1, line 39) and to place the filamentary product in a desired location."* (See page 7 of the Final Rejection at numbered paragraph 10).

And:

> *"Regarding the rejection of Claim 47 under 35 USC §103(a), Examiner again respectfully disagrees for reasons stated above for Guertin."* (See page 9 of the Final Rejection at numbered paragraph 15).

Appellant disagrees. Guertin does not disclose "all the limitations of claim 30" for the reasons indicated above. For example, Guertin's spray heads in manifold **21** do not directly or indirectly apply "a substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in parent claim 30. Guillermin et al. do not cure Guertin's deficiencies. Guillermin et al. describe a grooved cylinder **1** whose helical groove **2** has orifices **3** for distributing fluid under sufficient pressure to suspend a yarn **6** that makes multiples passes through groove **2**:



Guillermin et al.'s device is thus a coating station that saturates the yarn with the supplied fluid. Note in this regard that Guillermin et al. say their device avoids non-uniform treatment of the yarn (see e.g., col. 1, lines 23 – 34). Guillermin et al. clearly do not disclose or suggest application of "a substantially uneven coating to at least some of the exposed portion of a filamentous article" as recited in parent claim 30. Even if the Final Rejection's proposed combination of Guertin and Guillermin et al. were made, the combination would not provide the device of rejected claim 47, for at least the reason that the combination would not directly or indirectly apply a substantially uneven coating to at least some of the exposed portion of a filamentous article.

Appellant accordingly requests withdrawal of the rejection of claim 47 under 35 USC §103(a) as being unpatentable over Guertin in view of Guillermin et al.

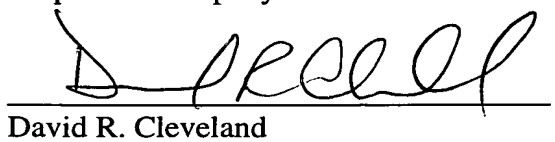
Conclusion

Claims 30, 33, 34 and 36 – 38 of the present application recite *inter alia*, "a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article". This feature is not shown or suggested by `955 Application claims 63 – 65, 67 and 68 and thus the provisional obviousness-type double patenting rejection is not warranted. Appellant will as noted reconsider whether a suitable terminal disclaimer should be filed if the divisional claims corresponding to `955 Application claims 63 – 65, 67 and 68 are allowed prior to issuance of a patent on present claims 30, 33, 34 and 36 – 38.

As can be seen from three of the cited yarn treatment references (*viz.*, Von Kohorn, Severini and Guertin), saturation using several continuously-operating spray nozzles is the norm for yarn treatment, not drip application. None of Von Kohorn, Severini or Guertin discloses a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article as recited in the rejected claims. Also, no valve, control or other structure capable of turning the Von Kohorn, Severini or Guertin spray nozzles on and off is shown in these references, and no suggestion is made in any of them that one should do so during a yarn treating run. A person having ordinary skill in the yarn treating art would leave Von Kohorn's, Severini's or Guertin's spray nozzles turned on during a yarn treating run, not turn them on and off. Also, if asked to consider the question, a person having ordinary skill in the yarn treating art would assume that turning the nozzles on and off during a run would produce defective untreated yarn. No proper basis has been provided for the Final Rejection's assertions that the Von Kohorn, Severini and Guertin devices should be modified by substituting drip applicators for their saturating spray nozzles, or that these cited devices should be modified so that they no longer apply a saturating spray. Also, even if the Guertin and Guillermin et al. devices were combined, the resulting combination would not directly or indirectly apply a substantially uneven coating to at least some of the exposed portion of a filamentous article.

Appellant accordingly requests that the provisional obviousness-type double patenting rejection be withdrawn or deferred, and that the 35 U.S.C. §102(b) rejections and 35 U.S.C. §103(a) rejections be reversed.

Respectfully submitted on behalf of 3M Innovative Properties Company



May 21, 2004

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CLAIMS ON APPEAL

30. (Amended): A device comprising a coating station that directly or indirectly applies a substantially uneven coating to at least some of the exposed portion of a filamentous article and an improvement station comprising two or more rotating rolls that periodically contact and re-contact the wet coating at different positions along the length of the filamentous article, wherein the number or periods of the rolls improve the uniformity of the coating.

31. (Original): A device according to claim 30 wherein the coating station drips the coating liquid onto the filamentous article or onto a roll.

32. (Original): A device according to claim 30 wherein the coating station sprays the coating liquid onto the filamentous article or onto a roll.

33. (Original): A device according to claim 30 wherein the coating station periodically applies the coating liquid and the application period can be adjusted to improve the uniformity of the coating.

34. (Original): A device according to claim 30 comprising at least three rolls.

35. (Original): A device according to claim 30 wherein the rolls have the same period of contact with the filamentous article.

36. (Original): A device according to claim 30 wherein the rolls do not all have the same period of contact with the filamentous article.

37. (Original): A device according to claim 36 wherein the rolls all have different periods of contact with the filamentous article.

38. (Original): A device according to claim 36 wherein the rotational periods of the rolls are not periodically related.

39. (Original): A device according to claim 36 wherein the filamentous article has at least five contacts with the rolls following application of the substantially uneven coating.

40. (Original): A device according to claim 36 wherein the filamentous article has at least eight contacts with the rolls following application of the substantially uneven coating.

41. (Original): A device according to claim 30 wherein the filamentous article has at least 13 contacts with the rolls following application of the substantially uneven coating.

42. (Original): A device according to claim 30 wherein the filamentous article has a direction of motion and the direction of rotation of at least one of the rolls is the same as the direction of motion.

43. (Original): A device according to claim 42 wherein the direction of rotation of at least two of the rolls is the same as the direction of motion.

44. (Original): A device according to claim 42 wherein the direction of rotation of all the rolls is the same as the direction of motion.

45. (Original): A device according to claim 44 wherein there is substantially no slippage between the rolls and the filamentous article.

46. (Original): A device according to claim 30 wherein at least one of the rolls is grooved.

47. (Original): A device according to claim 30 wherein all of the rolls are grooved.

48. (Original): A device according to claim 30 wherein a voided coating is applied to the filamentous article and converted by contact with the rolls to a void-free coating.

The following claims are no longer rejected but have not yet been allowed:

49. (Original): A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 10 micrometers.

50. (Original): A device according to claim 30 wherein the coating is converted to have an average caliper from 1 to about 5 micrometers.